

# IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Investor(s): May et al.

Examiner: Tonia Meonske

Serial No.: 10/652,135

Group Art Unit: 2183

Filing Date: 8/29/2003

Atty Docket No.: CML00769D

Title: Method and Apparatus for Elimination of Prolong and Epilog Instructions in a Vector Processor

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

## INFORMATION DISCLOSURE STATEMENT

Dear Sir:

The undersigned submits herewith patents, publications or other information (enclosed herewith and/or listed on the enclosed list of references form) of which he or she is aware, which he or she believes is relevant and may be material to the examination of this application and for which there may be a duty to disclose in accordance with 37 CFR §1.56. The order of listing of the references on the attached form and any appendix hereto is without regard for relative relevance to the present invention.

This Information Disclosure Statement is submitted:

- under 37 CFR §1.97(a), or  
(Accompanies the new patent application submitted herewith.)
- under 37 CFR 1.97(b), or  
(Within three months of filing national application; or date of entry of international application; or before mailing date of first office action on the merits; whichever occurs last.)
- under 37 CFR 1.97(c) together with either a:
  - Statement under 37 CFR 1.97(e), or
  - a \$180.00 fee under 37 CFR 1.17(p), or  
(After the CFR 1.97(b) time period, but before final action or notice of allowance, whichever occurs first.)
- under 37 CFR 1.97(d) together with a:
  - Statement under 37 CFR 1.97(e), and
  - a \$180.00 fee set forth in 37 CFR 1.17(p).  
(Filed after final action or notice of allowance, whichever occurs first, but before payment of the issue fee.)
- Applicant(s) submit herewith Form PTO 1449-Information Disclosure Citation together with required copies, of patents, publications or other information of which applicant(s) are aware, which applicant(s) believe(s) may be material to the examination of this application and for which there may be a duty to disclose in accordance with 37 CFR 1.56.
- PRIOR APPLICATIONS** References identified with an asterisk (\*) in the enclosed PTO Form 1449, were disclosed in prior Patent Application No. \_\_\_\_\_, filed \_\_\_\_\_, now U.S. Patent No. \_\_\_\_\_, and, as such, copies thereof are not included pursuant to the provisions of 37 CFR 1.98(d).

- FOREIGN LANGUAGE DOCUMENTS** A concise explanation of the relevance of foreign language patents, foreign language publications and other foreign language information listed on PTO Form 1449, as presently understood by the individual(s) designated in 37 CFR 1.56(c) most knowledgeable about the content is given on the attached sheet, or where a foreign language patent is cited in a search report or other action by a foreign patent office in a counterpart foreign application, an English language version of the search report or action which indicates the degree of relevance found by the foreign office is listed on Form PTO 1449 and is enclosed herewith.
- FEE AUTHORIZATION**  
At any time during the pendency of this application, please charge any fees required or credit any overpayment to Deposit Account **50-0375** pursuant to 37 CFR 1.25.

While the information and references disclosed in this Information Disclosure Statement may be "material" pursuant to 37 CFR §1.56, this statement does not constitute an admission that any patent, publication or other information referred to therein is "prior art" or "material" to this invention or any application for patent for this invention.

In accordance with 37 CFR §1.97, the filing of this Information Disclosure Statement shall not be construed to mean that a search has been made or that other information that may be material as defined in 37 CFR §1.56 exists. It is submitted that the Information Disclosure Statement is in compliance with 37 CFR §1.97 and §1.98 and MPEP §609. In addition, the Examiner is requested to conduct a thorough independent search in order to bring the best references available forward in this application.

It is requested that the information disclosed herein be made of record in this application.

Express Mail #

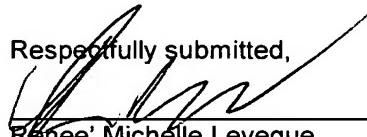
I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Date of Deposit: May 3, 2006

Typed Name: Paula Barton

Signature: 

Respectfully submitted,

  
Renee' Michelle Leveque  
Attorney/Agent for Applicant(s)  
Reg. No. 36,193  
Date: May 3, 2006  
Telephone No.: 301-668-3073



PTO/SB/08A (10-01)

Approved for use through 10/31/2002. OMB 0651-0031  
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB

control number.

Substitute for form 1449A/PTO

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

*(use as many sheets as necessary)*

Sheet

1

of

2

**Complete if Known**

Application Number	10/652,135
Filing Date	8/29/2003
First Named Inventor	May
Art Unit	2183
Examiner Name	Meonske, Tonia
Attorney Docket Number	CML00769D

**U.S. PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Document Number Number - Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		3,718,912	Feb-73	Hasbrouck et al.	
		4,128,880	Dec-78	Cray Jr.	
		4,744,043	May-88	Kloker	
		4,760,545	Jul-88	Inagami et al.	
		4,807,183	Feb-89	Kung et al.	
		4,825,361	Apr-89	Omoda et al.	
		4,918,600	Apr-90	Harper et al.	
		5,206,822	Apr-93	Taylor	
		5,367,494	Nov-94	Shebanow et al.	
		5,390,352	Feb-95	Kinoshita	
		5,450,607	Sep-95	Kowalczyk et al.	
		5,495,617	Feb-96	Yamada	
		5,652,909	Jul-97	Kodosky	
		5,697,788	Dec-97	Ohta	
		5,717,947	Dec-98	Gallup et al.	
		5,719,998	Feb-98	Ku et al.	
		5,734,863	Mar-98	Kodosky et al.	
		5,764,787	Jun-98	Nickerson	
		5,790,877	Aug-98	Nishiyama et al.	
		5,805,614	Sep-98	Norris	
		5,821,934	Oct-98	Kodosky et al.	
		5,881,257	Mar-99	Glass et al.	
		5,881,263	Mar-99	York et al.	
		5,887,183	Mar-99	Agarwal et al.	
		5,893,143	Apr-99	Tanaka et al.	
		5,936,953	Aug-99	Simmons	

**FOREIGN PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document Country Code <sup>3</sup> - Number <sup>4</sup> - Kind Code <sup>5</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>

Examiner Signature	Date Considered
--------------------	-----------------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup>See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04.

<sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Substitute for form 1449A/PTO

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

*(use as many sheets as necessary)*

Sheet 2 of 2

**Complete if Known**

Application Number	10/652,135
Filing Date	8/29/2003
First Named Inventor	May
Art Unit	2183
Examiner Name	Meonske, Tonia
Attorney Docket Number	CML00769D

**U.S. PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Document Number Number - Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		5,966,528	Oct-99	Wilkinson et al.	
		5,969,975	Oct-99	Glass et al.	
		5,999,736	Dec-99	Gupta et al.	
		6,052,766	Apr-00	Betker et al.	
		6,064,819	May-00	Franssen et al.	
		6,128,775	Oct-00	Chow et al.	
		6,173,389	Jan-01	Pechanek et al.	
		6,192,384	Feb-01	Daily et al.	
		6,202,130	Mar-01	Scales et al.	
		6,381,687	Mar-01	Sandstrom et al.	
		6,430,671	Aug-02	Smith	
		6,437,804	Aug-02	Ibe et al.	
		6,442,701	Aug-02	Hurd	
		6,513,107	Jan-03	Ansari	
		6,571,016	May-03	Mehrotra et al.	
		6,588,009	Jul-03	Guffens et al.	
		6,598,221	Jul-03	Pegatoquet et al.	
		6,629,123	Sep-03	Hunt	
		6,647,546	Nov-03	Hinker et al.	
		6,665,749	Dec-03	Ansari	
		6,732,354	May-04	Ebeling et al.	
		6,745,160	Jun-04	Ashar et al.	
		6,795,908	Sep-04	Lee et al.	
		6,898,691	Mar-05	Blomgren et al.	
		20020080795	Jun-02	Van Wageningen et al.	
		20030128712	Jul-03	Moriwaki et al.	
		20040003206	Jan-04	May et al.	
		20040117595	Jun-04	Norris	
		20050053012	Mar-05	Moyer	
		20050055534	Mar-05	Moyer	
		20050055543	Mar-05	Moyer	
		US-			

Examiner Signature	Date Considered
--------------------	-----------------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup>See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04.

<sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



PTO/SB/08B (10-01)

Approved for use through 10/31/2002. OMB 0651-0031  
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Substitute for form 1449B/PTO				<b>Complete if Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <i>(use as many sheets as necessary)</i>				Application Number	10/652,135
Sheet	1	of	1	Filing Date	8/29/2003
				First Named Inventor	May
				Art Unit	2183
				Examiner Name	Meonske, Tonia
				Attorney Docket Number	CML00769D

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
		LAM, M., Software Pipelining: An Effective Scheduling Technique for VLIW Machines, Proceedings of the SIGPLAN '88 Conference on Programming Language Design and Implementation, Atlanta, Georgia, June 22-24, 1988, pp. 318-328	
		LEE, T. et al., A Transformation-Based Method for Loop Folding, IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, Vol. 13, No. 4, April 1994, pp. 439-450	
		KAVI, K.M. et al., A Formal Definition of Data Flow Graph Models, IEEE Transactions on Computers, Vol C-35, No. 11, Nov 1986, pp. 940-948	
		COOPER, K.D. et al., Efficient Computation of Flow Insensitive Interprocedural Summary Information, SIGPLAN Notices, Vol. 19, No. 6, June 1984, pp. 247-258	
		STRONG, H.R., Vector Execution of Flow Graphs, Journal of the Association for Computing Machinery, Vol 39, No. 1, January 1983, pp. 186-196	
		AIKEN, A. et al., Resource-Constrained Software Pipelining, IEEE Transactions on Parallel and Distributed Systems, Vol. 6, No. 12, December 1995, pp. 1248-1270	
		WULF, WILLIAM A. "Evaluation of the WM Architecture." Proceedings of the 19 <sup>th</sup> Annual International Symposium on Computer Architecture: 1992, pp. 382-390, ACM 0-89791-509-7/92/0005/0382.	
		TALLA, D., Architectural techniques to Accelerate Multimedia Applications on General-Purpose Processors, Dissertation, August 2001, pp. 94-125	
		TALLA, D., Bottlenecks in Multimedia Processing with SIMD Style Extensions and Architectural Enhancements, IEEE Transactions of Computers, August 2003, pp. 1015-1031, Vol. 62, No. 8, IEEE	

Examiner Signature	Date Considered
--------------------	-----------------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup>Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231